

Street Functional Classification

Applicant	Location	Proposal
Public Works and Utilities Department and Technical Committee of the MPO	City of Lincoln and Lancaster County	Amend the Mobility & Transportation section to update the Existing and Future Functional Classification maps.
Recommendation: Approval		

Status/Description

Staff has worked with the City, County and Nebraska Department of Roads (NDOR) to better coordinate local and federal street and roadway functional classifications. The primary object is to develop a single functional classification structure for the Federal and Local operations. The result is the recommendation to amend the local maps located in the both the “Existing” and “Future Conditions” of the Mobility & Transportation sections of the Plan and the Federal Functional Classification Map maintained by the State Nebraska of Roads. The following are the general changes proposed for the Existing and Future Functional Classification Maps.

1. All roadways in the Future Urban Area with rural classifications are to be reclassified as urban.
2. The State Highway classifications on the Transportation Plan maps are to be adjusted to coincide with the State highway designations on the Federal Functional Classification Map.
3. Future non-existing roadways are to be identified on the Existing Functional Classification Map when planning activities, engineering work or funding is being committed for a facility. Several roadway projects are listed in the Transportation Improvement Program and need to be added to the Existing Functional Classification Map as “future non-existing roadways.”
4. Minor mapping errors need to be corrected on the Existing and Future Functional Classification Maps.
5. Several urban/rural collector functional classifications are recommended to be added to both the Existing and Future Functional Classification Maps.
6. Two minor adjustments to the “Urban Area Boundary” are needed on both the Existing and Future Functional Classification Maps in order to accommodate the future growth areas.

A detailed listing of these modifications are shown in the attached Functional Classification Maps

April 30, 2003

Comprehensive Plan Implications

Functional classification is the grouping of streets and highways into classes or systems according to the character of service they are intended to provide in relation to the total public road system. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads. It becomes necessary then to determine how this travel can be channelized within the network in a logical and efficient manner. Functional classification is to define the nature of this channelization process by defining the part that any particular road or street should play in serving the flow of trips through a highway network.

The objective is to identify the most significant trip purpose for which the road is used such as moving traffic, providing land use access, or national defense. The functional classification process is a practical technique for determining the travel corridors that should best serve through and local traffic in an urban area. The process determines the importance of all urban streets and highways in relation to one another and to urban development.

In general, the segregation of the urban street and highway system into classification provides the policy makers, transportation engineers and transportation planners with a foundation for:

- (a) establishing administrative highway systems;
- (b) designating design concepts or standards for highway systems;
- (c) evaluating and prioritizing critical highway deficiencies; and
- (d) apportioning highway funds.

Area Definitions

Urban and rural areas have fundamentally different characteristics as to density and types of land use, density of street and highway networks, nature of travel patterns, and the way in which all these elements are related in the definitions of highway function. Consequently, the functional classification system provides for separate classification of urban and rural functional systems.

Functional System for Rural Areas

Rural roads consist of those facilities that are outside of small urban and urbanized areas. They are classified into four major systems: principal arterials, minor arterial roads, major and minor collector roads, and local roads.

Rural principal arterial system The rural principal arterial system consists of a connected rural network with continuous routes that serve the longer trip lengths and the travel density characteristics that is representative of statewide or interstate travel. Typically, these routes are heavily traveled and are multi-lane facilities that include existing rural freeways. The principal arterial system is stratified into the Interstate System and non-Interstate principal arterials.

Rural minor arterial road system. The rural minor arterial road system should, in conjunction with the principal arterial system, form the rural network which link cities and larger towns to form an integrated network providing interstate and intercounty service. This system provides service to corridors with typically greater trip lengths and travel density and supports a system design for relatively high overall travel speeds and minimum interference to through movement.

Rural collector road system. The rural collector routes generally serve travel of primarily intracounty rather than statewide travel and are made up of routes that (regardless of traffic volume) tend to have shorter travel distances than on arterial routes. In order to define more clearly the characteristics of rural collectors, this system is subclassified into major and minor collector roads.

The major collector roads provide service to the higher traffic generators of intracounty importance, such as consolidated schools, shipping points, county parks, etc. and serve the more important intracounty travel corridors. The minor collector roads provide service to the remaining smaller communities and link the locally important traffic generators within the rural areas.

Rural local road system. The rural local road system primarily serves to provide access to adjacent land, and to provide service to travel over relatively short distances as compared to collectors or other higher systems.

Functional Systems in Urbanized Areas

The four functional systems for urbanized areas are urban principal arterials, minor arterial streets, collector streets, and local streets. The differences in the nature and intensity of development between rural and urban areas cause these systems to have characteristics that are somewhat different from the correspondingly named rural systems.

Principal Arterials. Principal Arterial streets and highways contain the greatest proportion of through or long-distance travel. Such facilities serve the high-volume travel corridors that connect the major generators of traffic. The selected routes should provide an integrated system for complete circulation of traffic, including ties to the major rural highways entering the urban area. Experience has shown that this class normally accommodates 40-65 percent of a region's travel on 5-10 percent of the street and highway network.

Generally, Principal Arterials include all the higher traffic volume streets, except those serving short trips or those serving as alternatives to more direct facilities (i.e., interstate, freeways and expressways, and other principal arterials).

Minor Arterials. Minor Arterial streets and highways connect with all remaining rural arterial and Collector roads that extend into the urban area. Minor Arterial streets and highways serve less concentrated traffic-generating areas such as neighborhood shopping centers and schools. This class distributes medium traffic volumes. Minor Arterial streets serve as boundaries to neighborhoods and collect traffic from Collector streets. Although the predominate function of Minor Arterial streets is

the movement of through traffic, they also provide for considerable local traffic that originates or is destined to points along the corridor.

The integrated system formed by Principal and Minor Arterial streets and highways should include 15-25 percent of the total street and highway network and serve 65-80 percent of motor vehicle travel.

Collector Streets. Collector streets provide direct service to residential areas, local parks, churches, etc. To preserve the amenities of neighborhoods, they are usually spaced at about half-mile intervals to collect traffic from Local-Access streets and convey it to Major and Minor Arterial streets and highways. Collector streets often serve as local bus routes. Direct access to abutting land is essential and parking and traffic controls are usually necessary to insure safe and efficient through movement of moderate to low traffic volumes.

The integrated arterial and collector system usually includes 5-10 percent of the street and highway system and serves 70-90 percent of all urban area motor vehicle travel.

Local-Access Streets. Local-Access streets are those not selected for inclusion in the arterial or collector classes. They allow access to individual homes, shops, and similar traffic destinations. Direct access to abutting land is essential, for all traffic originates from or is destined for abutting land. Through traffic should be discouraged by using appropriate geometric designs and traffic control devices.

A detailed discussion of the Federal Functional Classification concepts and criteria is found in the report *Highway Functional Classification: Concepts, Criteria and Procedures*, FHWA, 1989.

Urbanized Area Boundaries

Urban Areas are defined in Federal-aid highway law (Section 101 of Title 23, U.S. Code) as urban places of 5,000 or more population and urbanized areas as designated by the Bureau of the Census. This allows the States and local officials to identify the urban area boundaries which are subject to approval by the Federal Highway Administration (FHWA).

Urban Area Boundaries have a number of significant program implications required for each urban area. Specifically, the urban area boundaries 1) define the eligibility of routes for the use of urban system or Urban STP (STPC) funding, 2) define the application of urban transportation planning requirements under 23 U.S.C. 134, and 3) define the urban and rural limits for administering control of outdoor advertising (23 U.S.C. 131). Urban area boundaries are also used for statistical reporting, including the Highway Performance Monitoring System, needed to support national studies, such as the report on "The Status of the Nation's Highways and Bridges: Conditions and Performance" and highway safety studies required by the Congress.

Funding Issues

As of March 14, 2003 the FHWA and NDOR have agreed on the following definitions for application of federal funds to functionally classified roads.

- T Federal STP County funds (Q25) must be used outside of the census designated boundary (which may or may not be the corporate limits) of urban areas with a population of greater than 5,000.
- T In Transportation Management Areas (TMAs) (areas with a population greater than 200,000), Federal STP Attributable funds (Q23) can be used anywhere within the metropolitan planning boundary.
- T In other Urbanized areas (areas with a population between 50,000 and 200,000), Federal STP funds (Q20) may be used anywhere within the metropolitan planning boundary.
- T In other urban areas (areas with a population between 5,000 and 50,000), Federal STP City funds (Q20) may be used anywhere within the census designated boundary or the one-mile extra-territorial jurisdiction limit, inclusive.

Accordingly, the Lancaster County STP funds (STPE) can be used throughout the county including within the urbanized area boundary, but cannot be used within the census designated boundary (which may or may not be the corporate limits). The Urban Area STP funds (STPC) can be used anywhere within the metropolitan planning boundary. The Lincoln Metropolitan Area was determined by resolution No. A-60652, adopted January 21, 1974, to be the "standard metropolitan statistical area" (SMSA) consisting of all of Lancaster County. This term was changed to "metropolitan statistical area" (MSA) in 1983.

Conclusion

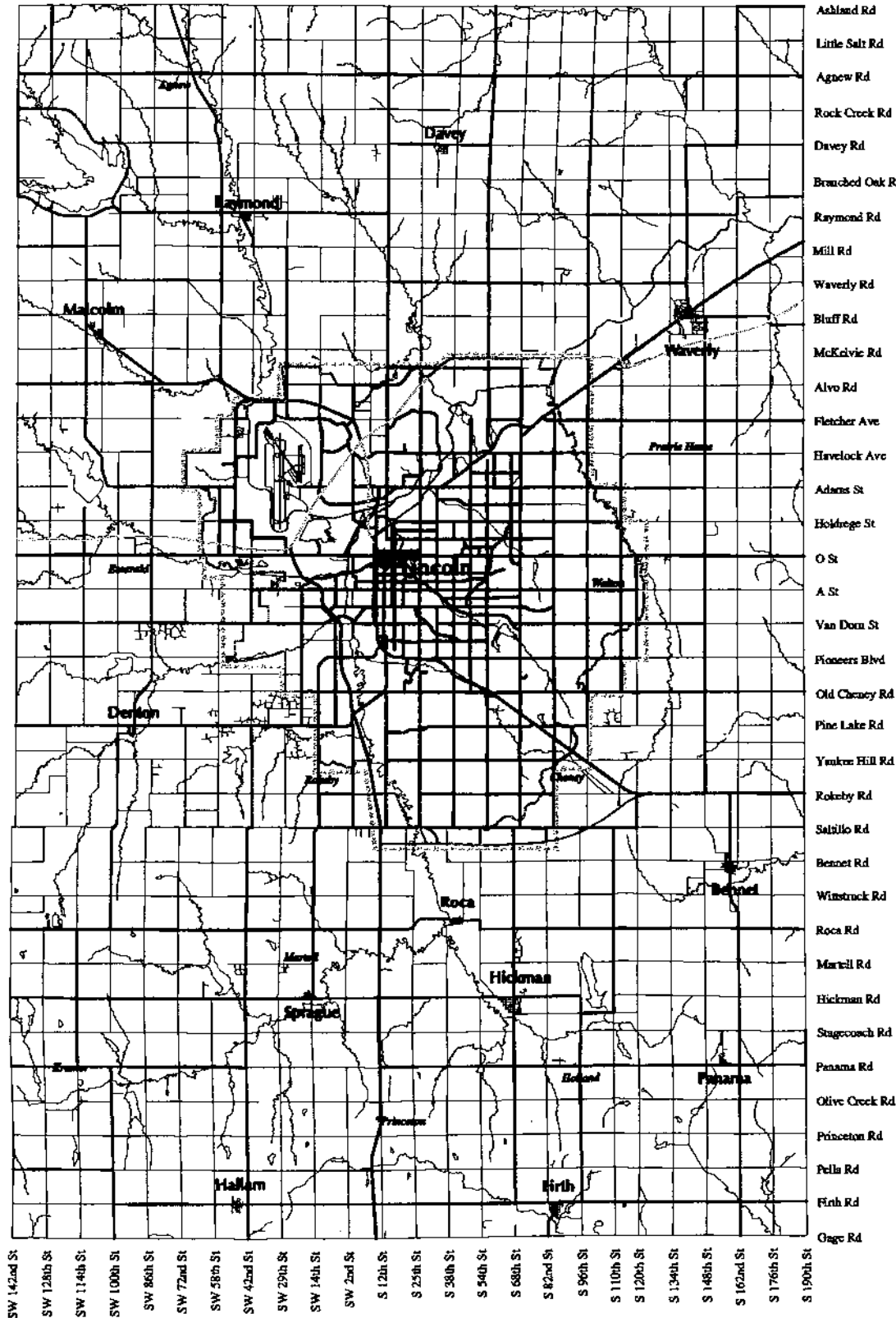
The amended functional classification maps are necessary to develop a single functional classification structure for the Federal and Local operations.

Amend the Comprehensive Plan as follows:

1. Existing County Roads Functional Classification, page E48 and Existing City Street Functional Classification, page E49 - Amend the 1) functional classification designation of streets and roads, and 2) adjust the Urban Area Boundary as shown on the attached Existing Functional Classification map.
2. Future Functional Classification: City Streets, page E103 and Future Functional Classification: County Roads, page E104 - Amend the 1) functional classification designation of streets and roads, and 2) adjust the Urban Area Boundary as shown on the attached Future Functional Classification map.

FUNCTIONAL STREET AND ROAD CLASSIFICATION: EXISTING

Lincoln - Lancaster County Comprehensive Plan



LEGEND

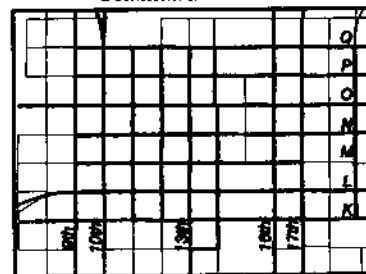
- Urban/Rural Interstate/Freeway & Expressway
- Urban/Rural Principal Arterial
- Urban/Rural Minor Arterial
- Urban Collector
- Rural Major Collector (State)
- Rural Major Collector (County)
- Rural Minor Collector
- Urban Area Boundary
- Future Service Limit

WORK IN PROGRESS



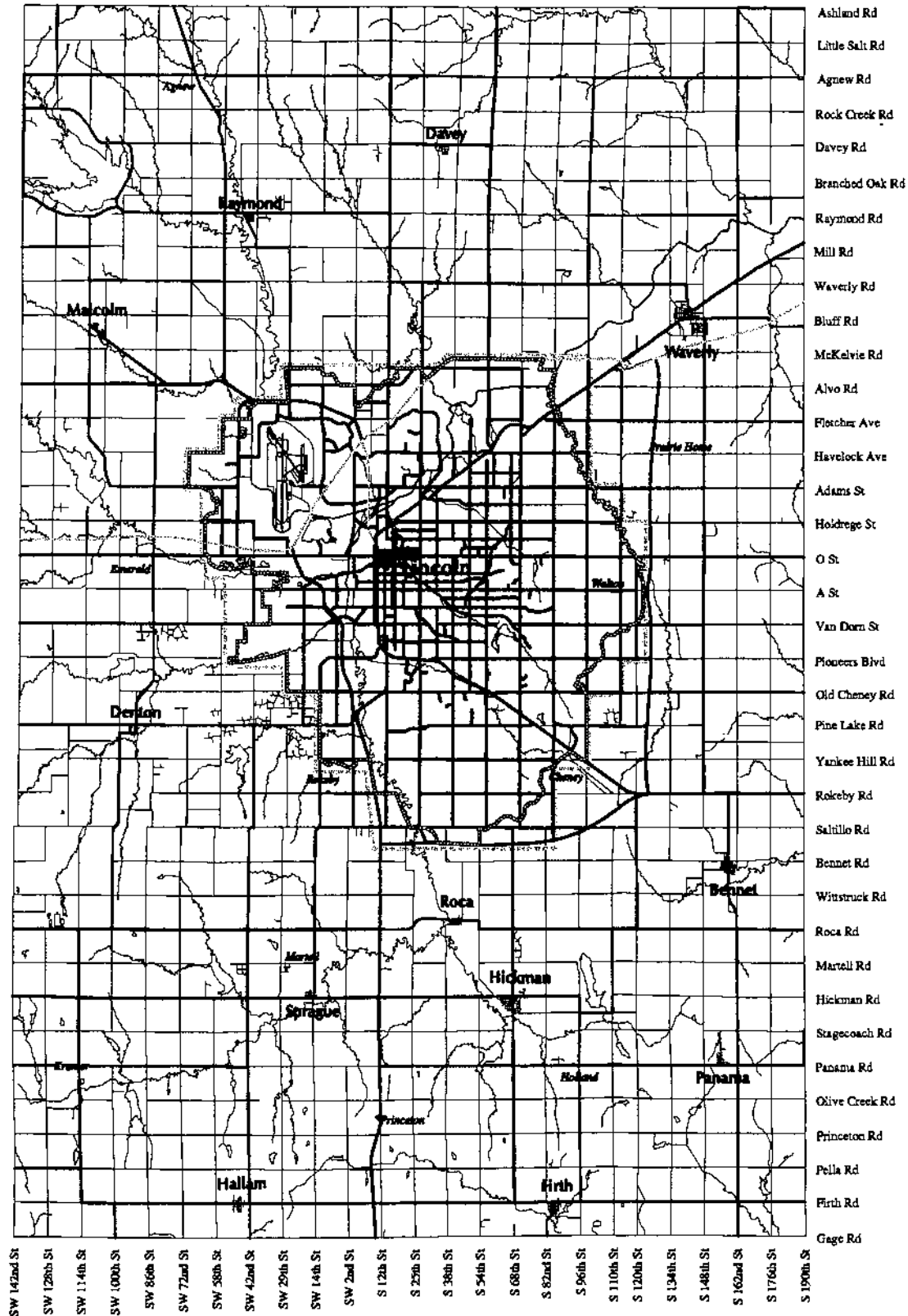
NOTE: Dashed line indicates future roadway

Downtown Lincoln Detail



FUNCTIONAL STREET AND ROAD CLASSIFICATION: FUTURE

Lincoln - Lancaster County Comprehensive Plan



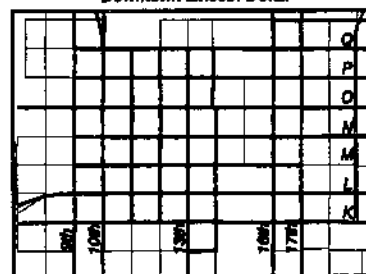
LEGEND

- Urban/Rural Interstate/Freeway & Expressway
- Urban/Rural Principal Arterial
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- Rural Minor Collector
- Urban Area Boundary
- Future Service Limit

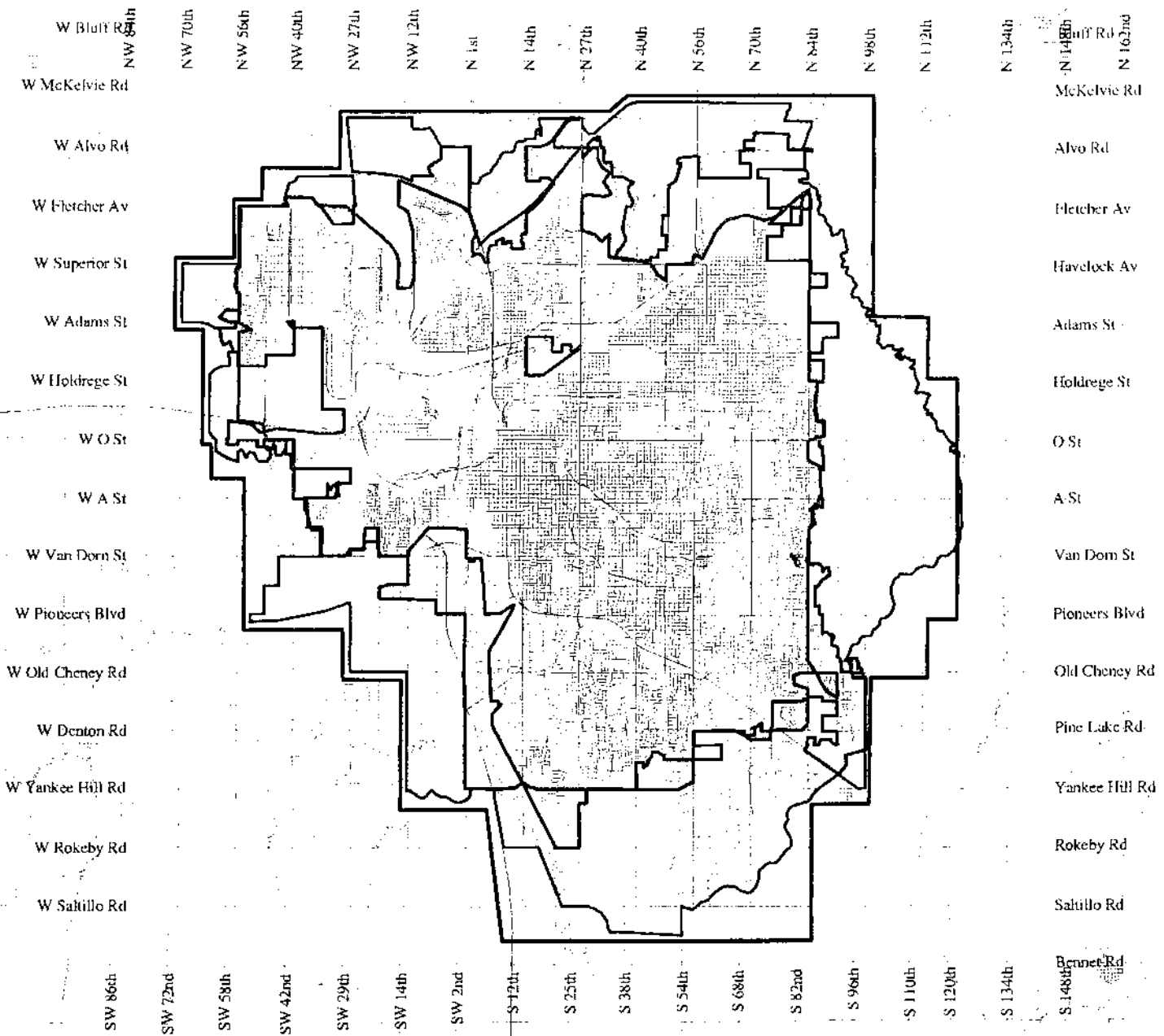
WORK IN PROGRESS







Downtown Lincoln Detail



Lincoln Metropolitan Planning Organization
Urban Area Boundary System



LEGEND

-  Future Service Limit
 2000 Census Urban Area Boundary
 Adjusted Urban Area Boundary
 City Limits as of 3/18/03

